INTERNATIONAL HEALTH TERMINOLOGY
STANDARDS DEVELOPMENT ORGANISATION

U.S. Nominations for IHTSDO Standing Committees

August 5, 2013

Technical Committee Candidates

Candidates Listed Alphabetically

Candidate Name: **Bouchta Irbouh**

Affiliation: **Kaiser Permanente**

Statement of Interest - Bouchta Irbouh

I am currently a member of the IHTSDO Technical Committee.

Why I am suited for the committee:

As the chief architect I have been actively leading the architecture, design and technical integration of the IHTSDO workbench within Kaiser Permanente enterprise wide infrastructure to support current and future needs of our terminology content modeling and distribution system.
In this role and over the past three years, I have applied my technical knowledge of the IHTSDO Workbench to architect, design and implement custom software components and extensions to the product to enrich, complement and integrate with other Kaiser Permanente enterprise wide application systems to better support our Electronic Health Record system.
I have contributed to a number of IHTSDO architectural reviews, design sessions and developer workshops where I have shared Kaiser Permanente experience to help in shaping, guiding and also impacting the technical direction of the IHTSDO Workbench product.
I have collaborated and coordinated with Informatics in assessing and addressing architectural and technical gaps of the product and helped identify and implement improvements to the architecture and to the overall design.
I have shared interest in the success and evolution of the IHTSDO workbench to better support enterprise terminology clients within Kaiser Permanente. My experience in advancing the use of the IHTSDO workbench and the development of custom processes and capabilities to support enterprise wide clinical content modeling and distribution could be leveraged and would constitute a valuable asset and an important contribution to the larger IHTDO community.

Why I feel that the committee work is important:

I do believe in the value of a common terminology modeling and distribution platform as a way to collaborate, author, share and distribute clinical terminology content to support internal clinical data analytics requirements as well as external health information exchange and meaningful use requirements.
The technical committee's work in defining a viable, robust, and scalable architecture based on industry standards and best practices will serve as a solid foundation in realizing shared terminology capabilities for use internally in health care quality analytics and externally as health information is shared to support patient care.
The technical committee's continued effort to improve the platform architecture, design, and performance and to define future capabilities is essential to this effort.

Curriculum Vitae - Bouchta Irbouh

Summary of Qualifications

- Successful I.T. professional with over 25 years of cumulative experience in I.T. and consulting services driving and delivering information technology architecture, engineering, design, development, and deployment.
- Strong knowledge of the enterprise architecture and its processes with extensive practical expertise and in-depth specialization in implementing technologies and leading projects.
- Extensive experience in the areas of enterprise systems architecture and design, systems integration, development lifecycle methodologies and best practices, application packages implementation, emerging technologies, business solution development, technical business analysis, technical project management, and team leadership.

Work History

Kaiser Permanente: Principal Technology Consultant 2010 – Present
Chief architect leading the architecture, design, development and technical integration of the IHTSDO workbench software components and extensions within Kaiser Permanente enterprise wide infrastructure to support current and future needs of Kaiser Permanente Clinical terminology content modeling and distribution systems.

Compuware Corporation: Senior Systems Architect 2007- 2009
Provided technical expertise during client interactions to identify potential consulting engagements and determine solution technical requirements, high-level architecture, and delivery phases. Conducted enterprise level technical assessments to achieve enterprise application systems integration and interoperability in alignment with defined enterprise business strategy.

Visual Soft: Senior Solution Architect 2002 - 2007
Provided a common architecture and technical vision across all relevant projects, ensuring technology reuse where possible through a collaborative effort with domain owners and technical leads. Made technological choices regarding products, methodologies, industry standards, and vendors to guide the I.T. staff. Defined, structured, and implemented new products technical architecture, design and development processes with appropriate tools and environments.

Kaiser Permanente: Application Systems Architect 1997 - 2002
Conducted enterprise application systems architecture and design activities within KP enterprise technical framework. Led technical business requirements gathering and analysis phases. Provided technical leadership, support, and oversight during application systems architecture, design, development, testing, and deployment phases.

INTERNATIONAL HEALTH TERMINOLOGY STANDARDS DEVELOPMENT ORGANISATION

Skills Matrix – Technical Committee

Please help us to ensure that IHTSDO Committees consist of a balanced and diverse set of expertise and experience. We would appreciate if you could complete the form below, marking each box for which you have relevant skills or experience.

Nominee

Name	Bouchta Irbouh

Skills Matrix

IHTSDO seeks individuals with a mix of skills to serve on Standing Committees. Please mark the attribute(s) in which you have experience and expertise at an organizational, national and/or international level.

Attributes	**Check all that apply**
SNOMED CT Design	
SNOMED CT Implementation	
SNOMED CT Tooling	X
Other Terminology Design	
Data Modelling/ Information Architect	X
System Implementation – which includes terminology component	X
Software production for market	X
Software design and development	X
Software release/ configuration	X
Systems Architecture	X
Systems Integration	X
National extensions	
International extensions	
Currently responsible for technical aspects of distributing/ managing SNOMED CT	
Currently responsible for technical aspects of a system which uses SNOMED CT as core terminology	X

Candidate Name: **Senthil K. Nachimuthu, MD, PhD**

Affiliation: **3M Health Information Systems, Inc.**

Senthil K. Nachimuthu, MD, PhD.

Statement of Interest for IHTSDO Technical Committee nomination

Why I am suited for the technical committee?

I have background and experience in clinical medicine and medical informatics, and have been a computer programmer for the last 20 years. I have built mapping applications, heuristic search algorithms and search engines to map SNOMED CT to the 3M Healthcare Data Dictionary. I use SNOMED CT in my infectious diseases research at the University of Utah School of Medicine, where I use it to standardize microbiology data and do clinical research with data from several hospitals. This diverse experience has taught me much about SNOMED CT, and the technical capabilities that are needed to support effective authoring, curation, maintenance and use of SNOMED CT to improve patient care.

I am the technical lead for HDD Access, a publicly available terminology with open source terminology software, published by 3M with support from the Department of Defense and the Department of Veterans Affairs. I lead the research, design and architecture of the products, and I listen to users' needs and answer their questions. This experience has taught the terminology needs of users as well as implementers, and this background will help me to contribute to the IHTSDO Technical Committee.

I am also a co-author of the HL7 Common Terminology Services v2 (HL7 CTS2) standard, which aims to standardize terminology services operations. IHTSDO is interested in using the HL7 CTS2 standard for SNOMED CT implementations, and my experience will help this effort immensely.

I have served as an adviser to the United States House of Representatives Committee on Veterans Affairs on terminology interoperability between the Department of Defense and the Department of Veterans Affairs. I have also served as the Chair of the AMIA Open Source working group, and I advice the AMIA community on the technical, business and intellectual property aspects of open source software.

My diverse experience with SNOMED CT combined with my strong foundation in clinical medicine, biomedical informatics and computer science will enable me to contribute to the technical committee. I also speak, read and write three languages, and I understand the multilingual needs of SNOMED CT well. This will serve as a nice bonus to my comprehensive experience with SNOMED CT. Hence, I request your support for my nomination to this committee.

Why is the technical committee's work important?

SNOMED CT aims to standardize several domains of healthcare, and naturally is large and complex just like healthcare. Effective understanding and use of SNOMED CT requires a solid design and user friendly tools for searching, crossmapping, creating subsets, extending the content, and painless change management. Both content developers and end users are often overwhelmed by the vastness of the content in SNOMED CT. The natural vastness of healthcare cannot be reduced. However, the content can be presented in a user-friendly way to both the content developers and end-users. This will help them from losing sight of the forest when they get too close to the trees. The IHTSDO technical committee is in a position to lead and contribute to all these areas, which will help the authoring and use of SNOMED CT. This will reduce the technical barrier to entry of SNOMED CT, and will promote standardization of biomedical content and improvement of patient care. In other words, the technical committee can enhance both the authoring of SNOMED CT content, as well as its implementation and use, resulting in wide-ranging benefits.

Senthil K. Nachimuthu, MD, PhD
Medical Informaticist

3M Health Information Systems, Inc

Education

2012 PhD in Biomedical Informatics, University of Utah, Salt Lake City, UT, USA.
2000 MBBS (equiv. to US Doctor of Medicine), Stanley Medical College, Chennai, India

Professional Experience

January 2010 to present: Medical Informaticist, 3M Health Information Systems.

Research and design of HDD Access, a publicly available terminology with open source terminology software. Terminology research and development involving various standard (SNOMED CT, LOINC, RxNORM, various editions of ICD-10, and others) and legacy terminologies. Application and search engine development for semi-automated vocabulary mapping, including mapping SNOMED CT to the 3M Healthcare Data Dictionary. HL7 CTS2 standards development. Strategic and tactical leadership of the clinical terminology group.

August 2010 to present: Research Associate, Division of Epidemiology, Univ. of Utah School of Medicine

Clinical data mining, data standardization and data analytics for detecting patterns of drug resistant infections in inpatient and outpatient populations. Modeling the emergence and spread of drug resistance in bacteria using machine learning methods.

Teaching Experience

Spring 2012: BMI 6220 Medical Vocabulary and Standards, Department of Biomedical Informatics, University of Utah School of Medicine.

Spring 2011: BMI 6220 Medical Vocabulary and Standards, Department of Biomedical Informatics, University of Utah School of Medicine.

Selected publications

Nachimuthu SK, Haug PJ. Early Detection of Sepsis in the Emergency Department using Dynamic Bayesian Networks. AMIA Annu Symp Proc 2012;2012:653-62..

Nachimuthu SK, Wong A, Haug PJ. Modeling Glucose Homeostasis and Insulin Dosing in an Intensive Care Unit using Dynamic Bayesian Networks. AMIA Annu Symp Proc 2010. 2010:532-6.

He S, Nachimuthu SK, Shakib SC, Lau LM. Collaborative Authoring of Biomedical Terminologies with Semantic Wiki. AMIA Annu Symp Proc 2009. 2009:234-8.

Nachimuthu SK, Lau LM. Practical Issues in Using SNOMED CT as a Reference Terminology. Proceedings of Medinfo 2007, The 12th International Health (Medical) Informatics Congress. Stud Health Technol Inform. 2007;129(Pt 1):640-4.

Nachimuthu SK, Lau LM. Applying Hybrid Algorithms for Text Matching to Automated Biomedical Vocabulary Mapping. AMIA Annu Symp Proc 2005:555-9.

Nachimuthu SK. Vocabulary Metadata Service for Terminology Servers to Handle Variations in Design of Various Biomedical Terminologies. AMIA Annu Symp Proc 2008. 2008:1062.

Nachimuthu SK, RD Woolstenhulme. Generalizability of Hybrid Search Algorithms to Map Multiple Biomedical Vocabulary Domains. AMIA Annu Symp Proc 2006:1042.

INTERNATIONAL HEALTH TERMINOLOGY STANDARDS DEVELOPMENT ORGANISATION

Skills Matrix – Technical Committee

Please help us to ensure that IHTSDO Committees consist of a balanced and diverse set of expertise and experience. We would appreciate if you could complete the form below, marking each box for which you have relevant skills or experience.

Nominee

Name	Senthil K. Nachimuthu, MD, PhD

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SNOMED CT Design	X
SNOMED CT Implementation	X
SNOMED CT Tooling	X
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System Implementation – which includes terminology component	X
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Software release/ configuration	X
Systems Architecture	X
Systems Integration	X
National extensions	
International extensions	
Currently responsible for technical aspects of distributing/ managing SNOMED CT	X
Currently responsible for technical aspects of a system which uses SNOMED CT as core terminology	X

Candidate Name: **Harold Solbrig**

Affiliation: **Mayo Clinic**

Statement of Interest – Harold Solbrig

From its inception in the 1990's to the present, SNOMED has always represented *potential* – the potential to assemble a large and diverse community of experts that could work together to produce an accurate, comprehensive reference terminology upon which the dialog of the clinical encounter could be based. Unfortunately, however, a variety of technical and economic forces have prevented this potential from becoming real. One of the key hurdles to SNOMED CT adoption has been the complexity of the distributed product, which still consists of a collection of tab, separated values accompanied by extensive documentation about possible approaches to loading and using the content.

In their 1994 paper[1], Nolan, Rector, Rush and Solomon argued that the view of terminologies as static data structures accompanied by "prescriptive advice" on how they were to be used, but they, instead, needed be defined in terms of functions and services – functions and services that "require the manipulation of highly complex conceptual, linguistic and coding structures" that needed to be 'subcontracted' to separate servers.

A full twenty years later, SNOMED CT is still distributed as static data structures and accompanying "prescriptive advice" that has grown to the point that entire teams are devoted to its enhancement and maintenance. The problem, however, is that the value of SNOMED CT is directly dependent on the implementations that depend on it. If a search algorithm doesn't find the proper code, that code won't be used. If poor hierarchical navigation tools prevent an end user from discovering the correct point in the concept hierarchy, vague or incorrect classification may be the result. Many SNOMED CT users are simply "dumbing down" the SNOMED relationships, replacing them with the vague SKOS 'broader', 'narrower' and 'related' associations instead. Others ignore the formal semantics completely, treating SNOMED CT more like a giant lexicon than a formally organized system.

The SNOMED CT Technical Committee needs to address this issue head on. Solid, reliable services need to be developed and distributed as part of the general SNOMED CT release. Test suites need to be provided that validate products and implementations that use SNOMED CT. The Technical Committee vision statement includes a *"… focus on technology related issues to the use and application of SNOMED CT, the fitness for purpose of frameworks and tools adopted in the application of SNOMED CT, and harmonization with other technical standards impacting the effective application of SNOMED CT in priority use cases.*[2]" I believe that the Technical Committee needs to make this part of its mission the top priority for the near future – that emphasis should be shifted from *internal* tools and support to those that can be directly incorporated and used in vendor and end user systems.

I bring a combination of software engineering, terminology modeling and healthcare systems development to the table that I believe can be used to effectively begin to transform SNOMED CT from a set of static tables and ever-expanding tome of "prescriptive advice" to a vetted and tested collection of certified software services that allow SNOMED CT to used as a turn-key application in a wide variety of clinical and research settings.

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[1] Nowlan WA, Rector AL, Rush TW, Solomon WD. *From terminology to terminology services.* Proc Annual Symposium on Computer applications in Medical Care. 1994:150-154.d

[2] http://www.ihtsdo.org/fileadmin/user_upload/Docs_01/About_IHTSDO/Governance_and_Advisory/Standing_Committees/Technical_Committee/IHTSDO_TC_TermsOfReference_20120601.pdf

Harold Solbrig

Mini Curriculum Vitae

July 2013

Career Highlights

- Editor and co-author of three generations of terminology service specifications
  - OMG Lexicon Query Services Specification (1988)
  - HL7/ANSI Common Terminology Services (CTS) Standard (2006)
  - HL7/OMG Common Terminology Services Edition 2 Specification (2011)
- Representative and contributor to major standards organizations
  - Health Level 7 (HL7) Terminology Technical Committee
  - ISO/IEC JTC1 SC32 WG2 – Metadata Repositories
  - ISO TC37 – Terminology and Other Language Content Resources
  - ISO TC215 – Healthcare Informatics
  - Object Management Group (OMG) Healthcare Domain Task Force and Ontology Platform Special Interest Group
  - W3C Health Care Life Sciences (HCLS) Working Group
  - WHO FIC representative for SNOMED-CT to ICD-10 Mapping project
- Participation and substantive contributions to
  - WHO ICD11 project
  - National Center for BioMedical Ontology (NCBO)
  - Cancer BioInformatics Grid (caBIG) Enterprise Vocabulary Services (LexEVS)
  - Semantic MediaWiki working group
  - CDISC SHARE project – a prototype of a wiki and ontology based semantic harmonization workbench
  - NCI/OBO project – recommendations and prototypes for re-organizing and refactoring the NCI Thesaurus to better function in a federated ontology environment
- Architect and lead developer for
  - Mayo LexGrid and LexEVS projects
  - 3M Healthcare Data Dictionary (HDD) project
  - Multiple generations of laboratory data systems

Employment Highlights

Mayo Clinic Rochester, MN **1999-2006,2008-Present**
Technical Specialist II, Division of Biomedical Statistics and Informatics

Apelon, Inc. Ridgefield, CT **2006-2008**
Senior Informatics Architect

3M Health Information Systems Salt Lake City, UT **1988-1999**
Software Development Specialist

Knowledge Data Systems/BSL Technology Salt Lake City, UT **1977-1979, 1981-1988**
Senior Systems Programmer / Software Engineer

Education

- BS Mathematics, Minor Computer Science (Summa Cum Laude)
  Westminster College, Salt Lake City, UT
- Currently enrolled in masters program in software engineering
  Oxford University, Oxford UK

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